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10/779,961	02/17/2004	Jeffrey Liu	DCARD-0401	9107
7590 03/09/2006			EXAMINER	
Bo-In Lin 13445 Mandoli Drive Los Altos Hills, CA 94022			WALSH, DANIEL I	
			ART UNIT	PAPER NUMBER
			2876	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,961

Applicant(s)

LIU ET AL.

Examiner

Daniel I. Walsh

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-32, 34-56 and 58-78 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-32, 34-56 and 58-78 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Response is acknowledged of the Amendment received on 28 December 2005. The indicated allowable subject matter recited in previously presented claims 6, 8, 25, 29, 33, 51, 53, 57, 76, and 78 are withdrawn in view of the new rejections presented below.

Claim Objections

2. Claims 25, 29, 51, and 76 are objected to because of the following informalities:

Replace “heat-activated bonding layer activated with a heat applying to said OMS on an area not overlapping” with – the heat-activated bonding layer activated by applying heat, in a non-overlapping manner with respect to the recording layer, to said OMS --. Such a claim amendment removes the possibility of negative limitations (see MPEP 2173.05(i)).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 12, 37, and 61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention. Claims 12, 37, and 61 (and their base claim) recite that the optical memory strip supports an optical data track having a plurality of arc segments and that the data track further includes a linear data-track segment. The Examiner notes that the specification does not show or teach that the optical data track supported on the OMS has a plurality of arc segments and further includes a linear data track segment. The Examiner notes that FIG. 1A appears to show a card with both linear and arc segments, but there is not an OMS. FIG. 2 shows an OMS with an arc segment, but not that the optical data track (having the arc segment) includes a linear data track. For purposes of Examination the Examiner has interpreted the limitations to mean that a linear data storage element is also on the card, noting that the specification teaches that the linear means 710 can be magnetic.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-5, 7-11, 25, 29-32, 34-36, 51-56, 58-60, and 76-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al. (US 4,868,373) in view of Terashima et al. (US 5,724,617).

Re claims 1,30, 54 and 78 Opheij et al. teaches a data storage card comprising at least an optical data track for storing data accessible with an optical data accessing means, wherein the optical data track is supported on an optical memory strip as a cutoff piece attached to the data storage card (FIG. 1a and 1b). Though silent to being formed as a cutoff piece, the Examiner notes that it would have been obvious to one of ordinary skill in the art to form the optical storage, interpreted as a strip, including the tracks, as a separate piece/cutoff piece, in order to have parts that can be assembled to form the card. Additionally, though silent to a strip, the Examiner notes that the optical storage media is broadly interpreted as a strip/disc. Additionally, the Examiner notes that that forming the OMS as a cutoff piece is functional language and does not further define the structure of the datacard.

Re claim 2, Opheij et al. teaches additionally a magnetic strip can be provided on the card (col 7, lines 25+).

Re claim 3, Opheij et al teaches a semiconductor chip for storing data accessible with a semiconductor data accessing means (microelectronic 20).

Re claims 4, 31, 55 Opheij et al. teaches the optical data track has a plurality of circular arc segments (FIG. 1A). The Examiner notes that the optical storage media is interpreted to

include pits/lands/grooves, as is conventional in the art. The Examiner has interpreted the optical media to include arc segments in order to form the storage areas of the media.

Re claims 5, 32, 56 Opheij et al teaches the optical data track has a plurality of arc segments formed as spiral segments having a fixed center rotating with continuously varying radius through FIG. 1A. The segments are interpreted as circular spiraling arc segments. Re claims 4-5, 7-11, 34-36, 52, 58-60, and 77 the Examiner additionally notes that circular arcs (concentric) or spiraling arcs (including those set forth in the claims) are both conventional in the art, and readable by conventional optical reading devices. The selection of either type of shape (concentric or spiral) is one well within the ordinary skill in the art, depending on the manufacturing process employed and the reader used, for example, to store optical data around a constant center. There is interpreted to be arc segments in the optical storage media as formed by the optical media (pits/lands/grooves, etc.), as is known in the art. The Examiner also notes that the claims do not recite that the segments are non-continuous segments not part of the same optical data track, and therefore one large spiral or circle is interpreted to contain a plurality of segments, when broadly interpreted.

Re claims 26-27, Opheij et al. teaches an OMS placement area having a lower surface profile having an area slightly larger than the OMS for placing and attaching the OMS as a cutoff piece to the data storage card, and that the heights of the OMS and data storage card are the same/flush (FIG. 1B).

Re claim 28, Opheij et al. teaches that the first protective layer is glued to the card (col 6, lines 1+), which is interpreted as a bonding layer.

Re claims 25, 29, 51, and 76 though silent to a heat-activated adhesive, the Examiner notes that heat activated adhesives are well known and conventional in the art. It would have been obvious to use a heat-activated adhesive in order to secure adhesion between the layers. Selection of a type of adhesive from different well-known adhesives is within the skill in the art, to ensure bonding, for example. Re claims 25, 29, 51, and 76, though silent to only applying heat to areas that do not overlap the recording layer, the Examiner notes that such claims are a product by process type claim. As such, the Examiner contends that the end product appears to the same as or an obvious variant of the product set forth by the product by process claims, although produced by a different process (not overlapping the recording layer), see *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983) and *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985), see also MPEP 2113.

Opheij et al. is silent to the optical track further having a plurality of arc segments formed as spiral segments having a moving center with continuously varying radius.

Terashima et al. teaches wobbling grooves (FIG. 5) on the optical storage medium, which form arc/spiral/circular segments with a moving center. A varying radius has been discussed above. Re claim 8 and 53, though silent to a constant radius, the Examiner notes that the wobble tracks are interpreted as having a constant radius as they are interpreted as sinusoidal like curves, where the curves are periodic, this defining a constant curvature/constant radius for each portion/curve when compared to another portion.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teachings of Opheij et al. with those of Terashima et al.

One would have been motivated to do this for additional data storage.

5. Claims 12, 37, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al./Terashima et al., as discussed above, in view of Cheung (US 6,814,286).

The teachings of Opheij et al./Terashima et al. have been discussed above.

Opheij et al./Terashima et al. are silent to a linear data track on the card.

Cheung teaches a card with optical, magnetic (linear stripe), and IC means to store and read out information.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teachings of Opheij et al./Terashima et al. with those of Cheung.

One would have been motivated to do this to have a card that can be read by multiple readers (convenience).

6. Claims 13-14, 16-19, 21, 24, 38-39, 41-44, 46, 49-50, 62-63, 65-68, 70, and 73-75, are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al./Terashima et al., as discussed above, in view of Ovshinsky et al. (US 5,591,501).

Re the above claims, the Examiner notes that the claims recite well-known structures for optical storage mediums (CD, CD-R, and CD-RW). The use of a focusing layer, reflective layer (CD), the use of a dye layer (CD-R), and the use of a phase change layer and dielectric layer (CD-RW) are all well known and conventional. Accordingly, one would have been motivated to use one of the aforementioned well known optical storage media formats, based on system and design constraints (ability to read, write, rewrite, etc.) and is well within the skill in the art.

Re claim 13, the teachings of Opheij et al./Terashima et al. have been discussed above.

Opheij et al./Terashima et al. are silent to the specifics of the layers and use of a trench.

Re claims 24, 49, 50 and 73-75 Opheij et al. teaches the use of a glue (layer), as discussed above.

Though silent to a heat activated layer, it would have been obvious to one of ordinary skill in the art to use a heat activated bonding layer, as a means to control the bonding through temperature. Such adhesives are known in the art to produce controlled and expected results. Re claims 50 and 73-75, the Examiner notes that it would have been obvious to one of ordinary skill in the art to cut or otherwise form the OMS to be bonded to the card, as a well-known and conventional means of adding optical storage to a card substrate.

Re claims 13, 38, and 62 Ovshinsky et al. teaches a recording layer for disposing the data track wherein the recording layer has an area smaller than the OMS as the cutoff piece (FIG. 2A). Additionally, the Examiner notes FIG. 1, which shows that the center of the disc does not have optical media extending all the way to the center. That also supports the teaching that the recording layer is smaller than the OMS as a cutoff piece.

Re claims 14, 39, and 63 Ovshinsky et al. teaches a protective layer with a trench for disposing a recording layer therein for containing the optical data track through substrate 11, which has trenches in it that are used to hold the recording layer.

Re claims 16, 41, and 65 though silent to a dye layer below the recording layer in the trench, the Examiner notes that dye layers (organic, anthraquinone, melocyanine, etc.) are well known and conventional in optical media (CD-R) for example. One would have been motivated to use a dye layer in order to permit conventional altering of the optical media.

Re claims 17, 42, and 66 Ovshinsky et al. teaches a dielectric layer in the trench through dielectric layer 21.

Re claims 18, 43, and 67 Ovshinsky et al. teaches a phase change material in the trench (FIG. 2A).

Re claims 19, 44, and 68 Ovshinsky et al. teaches a focusing layer (layer 49). Though silent to focusing, the Examiner notes that it would have been obvious for the layer 49 to focus light, as it is there for projecting a laser beam through for accessing data in the recording layer.

Re claims 21, 46, and 70 the Examiner notes that it is well known and conventional for the dye layer to be on the recording layer (for recording). Accordingly, it would also be obvious to put the dye layer in the trench for protection/isolation, as it has been discussed above that the recording layer is inside the trench.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to combine the teachings of Opheij et al./Terashima et al. with those of Ovshinsky et al.

One would have been motivated to do this in order to have a optical storage medium that has increased sensitivity, decreased jitter and CNR, etc.

Re claims 13-14, though the teachings of Ovshinsky et al. teach a metal phase change layer, it is obvious to one of ordinary skill in the art to use discrete recording areas with any recording mode (CD/CD-R/CD-RW) for the reasons set forth by Ovishinsky et al., i.e. increased sensitivity, decreased jitter and CNR, etc.

7. Claims 15, 20, 22, 23, 40, 45, 47, 48, 64, 69, and 71-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Opheij et al./Terashima et al./Ovshinsky et al., as discussed above, in view of Miyai et al. (US 4,807,220).

Re the above claims, the Examiner notes that the claims recite well-known structures for optical storage mediums (CD, CD-R, and CD-RW). The use of a focusing layer, reflective layer (CD), the use of a dye layer (CD-R), and the use of a phase change layer and dielectric layer (CD-RW) are all well known and conventional. Accordingly, one would have been motivated to

use one of the aforementioned well known optical storage media formats, based on system and design constraints (ability to read, write, rewrite, etc.) and is well within the skill in the art.

Re claims 15, 20, 22, 23, 40, 45, 47, 48, 64, 69, and 71-72 the teachings of Opheij et al./Terashima et al./Ovshinsky et al. have been discussed above.

Ovshinsky et al. teaches a reflective layer 35 disposed beneath the recording layer and the dielectric in the trench, as well as the phase change layer (FIG. 2A), but fails to teach that the reflective layer is in the trench.

Miyai et al. teaches the reflecting layer is sealed in a trench (FIG. 4).

At the time the invention was made, it would have been obvious to combine the teachings of Opheij et al./Terashima et al./Ovshinsky et al. with those of Miyai et al.

One would have been motivated to do this to protect the layers of the recording media.

Additionally, the Examiner notes that dielectric, focusing, protective, and phase change layers are well known and conventional in the art for CD-RW. One would have been motivated to use them for such storage media capabilities. The use of a dye layer is also known for CD-R, for such storage media capabilities. The use of trenches or isolation has been discussed above as producing expected results (see above).

Additional Remarks

8. The Examiner notes that the current Application appears to have limitations drawn to the structure of the card, means for forming portions of the card, etc., which possible raise the issue of a possible restriction/election of species.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Chan (US 6,874,158) which teaches a disc holder, Miura et al. (US 5,248,584) which teaches an optical card and thermal adhesive, Yamamuro et al. (US 4,865,949) teaches an optical medium with thermal bonds, Tosaki et al. (US 6,791,937) teaches wobble in a optical disk, Shoji et al. (US 2006/0028973) teaches wobble, Nishikiori et al. (US 6,887,547) teaches an optical storage medium, Hennessey (US 5,985,400) teaches an optical medium, Kubota et al. (US 5,763,868) teaches an optical card with magnetic stripe and bonding or heat fusing of the optical member, Mayer (US 3,871,119), Burnett (US 6,597,653) teaches a CD card with strip, and Higgins et al. (US 2003/0136846) teaches an ID card.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel I. Walsh whose telephone number is (571) 272-2409. The examiner can normally be reached on M-F 7:30-4:00.

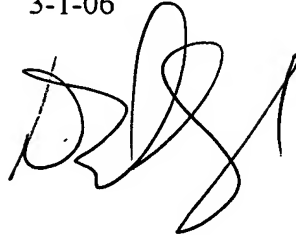
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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D. Walsh

Daniel I Walsh
Examiner
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A handwritten signature in black ink, appearing to read 'D. Walsh', with a stylized flourish extending from the end.